REMARKS

Reconsideration and allowance of the present application are respectfully requested. Claims 1-6 remain pending in the application. By this Amendment, a replacement drawing (Figure 3) has been provided. No new matter is added.

In numbered paragraph 1 of the Office Action, the Examiner objects to the drawings under 37 C.F.R. §1.84(p)(4) asserting that the reference character 328 has been used to designate both the selected 128 point frequency domain signals and FFT block as described in page 7, lines 11 and 12. Figure 3 has been corrected to obviate the objection by eliminating the functional block designated as 328. Withdraw of the objection to the drawings is respectfully requested.

On pages 3 through 6 of the Office Action, claims 1, 3, 4 and 6 are rejected as being unpatentable over U.S. Patent 6,690,657 (Lau et al.) in view of U.S. Patent 4,316,282 (Macina); and claims 2 and 5 are rejected as being unpatentable over the Lau et al. patent and the Macina patent, and further in view of U.S. Patent 5,638,406 (Sogabe). These rejections are respectively traversed.

A system and method for adaptive information compression are disclosed. As exemplified in Figs. 1 and 2, an adaptive information compression system and method compresses underutilized information present in a wide-band signal into a narrower maximum utilized information band signal. This can be achieved by obtaining a spectral concentration map of an input wide-band signal by transforming the wide-band signal into the frequency domain (e.g., 102 and 216) and de-selecting the data space where there is substantially little spectral activity (e.g., 104 and 220). A narrow-band signal is created by reformatting the remaining data space into a contiguous narrow-band signal (106). The original time-domain image of the data

(e.g., 100), which has the inactive spectra removed (104, 220), is reconstructed (110) from the narrow-band signal (108).

The foregoing features are broadly encompassed by claims 1 and 4, which recite, among other features, an adaptive information compression system, or method, respectively. These claims recite evaluating segments of a radio frequency signal in order to determine which segments are active, and reformatting the active segments into a contiguous order in a signal with a lower bandwidth than said radio frequency signal.

In numbered paragraph 2, on page 2 of the Office Action, the Examiner asserts that the Lau et al. patent discloses an adaptive information compression system in Figures 9-17 for a high-bit-rate data communication. To the contrary, the Lau et al. patent does not disclose or suggest an adaptive information compression system.

The Lau et al. patent discloses a multichannel distributed wireless repeater network having receivers and low power transmitters that radiate on frequencies other than the received frequency, without compressing the received frequency. Signals are simply repeated in limited propagation space, such as inside a home or an office (abstract). The Lau et al. patent discloses converting radio signals into time division multiplexed signals, and uses a priori data regarding channel assignments. (See, column 7, lines 29-35; column 9, lines 25-38.) The Lau et al. patent does not evaluate a radio frequency signal to determine which segments are active as encompassed by the presently claimed invention, and the repeater disclosed by the Lau et al. patent is not used for adaptive information compression. The Lau et al.

patent's disclosed repeater is neither adaptive, nor does it compress a radio frequency signal as is presently claimed.

In numbered paragraph 2, on page 2 of the Office Action, the Examiner admits that the Lau et al. patent fails to disclose an output with a lower bandwidth than a radio frequency signal as is presently claimed. However, the Examiner asserts that the Macina patent cures the deficiency of the Lau et al. patent. This assertion is respectfully traversed.

The Macina patent discloses a multichannel frequency translation of sampled waveforms by decimation and interpolation. However, the disclosed system is a frequency division demultiplexing system for converting broad band input signals into k baseband signals. A fixed hardware implementation is used for demultiplexing of a time-domain broad band input signal. The Macina patent does not cure the deficiencies of the Lau et al. patent, because the Macina patent's frequency division demultiplexing system is not adaptive and does not compress a radio frequency signal as claimed. The presently claimed feature of evaluating segments of a radio frequency signal involves software implemented real-time analysis within the radio frequency domain, and the resulting lower bandwidth signal is an adaptively compressed signal. Such features are neither taught nor suggested by the demultiplexing of a received time-domain signal into channels of baseband signals as disclosed by the Macina patent.

The Sogabe patent was relied upon as disclosing a means for comparing the power of each of said segments to a predetermined threshold value. However, the Sogabe patent does not cure the deficiencies of the Lau et al. patent and the Macina patent. The Sogabe patent relates to a carrier detector which determines whether a

carrier is present over a defined frequency axis (abstract). The Sogabe patent does not teach or suggest adaptive information compression, evaluation of segments of a radio frequency signal to determine active segments of the radio frequency signal, and reformatting of the active segments into a lower bandwidth radio frequency signal. Rather, the Sogabe patent detects a carrier signal based on a threshold and outputs a carrier detection signal.
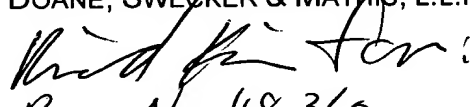
As such, Applicants' independent claims 1 and 4 are allowable. All of the remaining claims depend from independent claims 1 and 4 and are also allowable.

Should there be questions regarding any of the above, it is respectfully requested that the undersigned be contacted at the number shown below.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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AMENDMENT TO THE DRAWINGS:

The attached sheet of drawing includes changes to Figure 3. The sheet, which includes Figure 3, replaces the original sheet including Figure 3. In Figure 3, the drawing is corrected to exclude the functional block identified by 328.